JOURNAL CONTENTS VOL. 33, 1954.

	Page		page		page
January		The 1953 Viscount Nuffield Pap		Institution Publications	298
"Some Aspects of Personnel		" Productivity-Are We On The		Correspondence	299
Management ' by Dr. A. S.		Right Road?" by The Rt.		Institution Notes	300
Roy	1	Hon. Lord Sempill, A.F.C.,		News of Members	302
"The Manufacture of Plate		F.R.Ae.S., Hon.M.I.Prod.E.	146	New Appointments	303
Glass" by Sir Harry		Report and Discussion	152	New Building Fund Appeal	304
Pilkington (The 1953 George		"The Effective Utilisation of		Members' Records	304
Bray Memorial Lecture)	7	Material" by Frank Nixon,		Hazleton Memorial Library	306
Report and Discussion	17	B.Sc., F.R.Ae.S., M.I.Mech.E.	159		
"Some Notes on Carbide Milling		Communications	181	June	
Practice at the Small Arms		"Measurement in Gear Manu-	100	"Depreciation of Plant and	
Factory, Lithgow, N.S.W."		facture" by R. D. B. Stone	183	Machine Tools" by Sir Stanley Rawson	315
by P. J. W. Cottrell, B.E.,	0.1	Future Institution Activities	186	"Fundamentals of Gauge De-	313
Grad.I.Prod.E	31	Report of the Annual General	187	sign" by K. J. Hume, B.Sc.,	
"The Ethics of Production"		Meeting, 28th January, 1954 Report of the Meeting of Coun-	107	M.I.Mech.E., M.I.Prod.E.	318
by R. W. Mann, M.I.E.E., M.I.Prod.E., M.I.Min.E	44	cil, January, 1954	189	Discussion	326
Institution Notes	48	Election of Members	190	"Development in Constitution	
Institution Notes New Appointments	49	Extracts from Local Section	130	Machines" by A. K. Thomas, V.D.I., A.M.I.Prod.E	
New Appointments Hazleton Memorial Library	50	Reports	192	Thomas, V.D.I.,	
Notice of Annual General	30	Institution Notes	196	A.M.I.Prod.E	329
Meeting	54	New Appointments	199	"Maximum Ex Minimo" by	
Articles of Association of the	0.	Hazleton Memorial Library	200	E. G. Brisch, Dipl.Ing., M.I.Mech.E., M.I.Prod.E.	
Institution of Production		,		M.I.Mech.E., M.I.Prod.E.	344
Engineers	56			Report of the Meeting of Coun-	
Report on Election of Members		April		cil, 29th April, 1954	352
to Council 1953/54	62	"The Finance of Production"		Election of Members	354
Report of Council, 1st July,		by S. P. Chambers, C.B.,	000	Extracts from Local Section	
1952, to 30th June, 1953	63	C.I.E	207	Reports	356
		An Investigation into Indus-		Institution Notes	360
February		trial Design and Drawing		New Appointments	363
The President	75	Practices in New South		New Building Fund Appeal	364
The President Conference on "Problems of		Wales, Australia, by	210	Hazleton Memorial Library Shell Moulding: a select	364
Aircraft Production"-Open-		I.Prod.E. Sydney Section "Some Present Day Trends in	210		365
ing Address by The Right		Engineering Metrology" by		bibliography	303
Hon. Lord Hawke	77	C. O. Taylerson, M.B.E.	233	July	
Programme and Speakers	79	"Manual Skills and Industrial	200	"The Production Exhibition	
Session I		Productivity" by W. Doug-		and Conference" by The	
"The Trend of Design" by			240	Rt. Hon. Peter Thorneycroft,	
D. Keith-Lucas, B.A.,	00	Communication	248	M.P	371
M.I.Mech.E., F.R.Ae.S Discussion	80 89	Institution Notes	249	Production Conference Papers	
Discussion Session II	03	Standardisation	249	"Practical Applications of Pro-	
"Production Problems Arising		Future Institution Activities	251	duction Engineering Re-	
from the Trend of Design"		News of Members	252	search" by Dr. D. F.	
by G. H. Dowty,		New Appointments	253	Galloway, Wh.Sch., B.Sc.(Hons), M.I.Mech.E., M.I.I.A., A.M.I.E.E., M.Inst.Pet.	
M.I.Mech.E., F.R.Ae.S.,		New Building Fund Appeal	254	B.Sc. (Hons), M.I.Mech.E.,	
F.I.Ae.S., and S. P. Woodley,		Hazleton Memorial Library	255	M.I.I.A., A.M.I.E.E.,	074
M.B.E	93			M.Inst.Pet.	374
Discussion	113	May		"Production Engineering Re- search and the Information	
Session III		"Design for Production" by		Services at Work in the Fac-	
"User Problems Affecting the		R. S. Medlock	261	tory" by W. P. Kirkwood,	
Industry" by B. S. Shen-		"The Trend of Surface		B. Sc., M.I.Mech.E.,	
stone, M.A.Sc., F.R.Ae.S.,		Measurement " by R. E.		M.I.Prod.E.	390
A.F.I.Ae.S., and Sir R. Owen		Reason, A.R.C.S	263	"The Trade Union Attitude to	330
Jones, K.B.E., C.B., A.F.C.		"Human Factors in Engineer-		Research and Productive	
Discussion		ing Production" by John		Research and Productive Efficiency" by James Craw-	
Conference Summing-up by Sir		Munro Fraser, M.A	277	ford, F.B.S.I	398
Frederick Handley Page,	100	Discussion	281	"Standardisation in the Process	
C.B.E	129	"Batch Quantities, Profits and		Industries " by E. W. Green-	
Institution Notes—The New	134	Investment "Abstracted from		smith, A.C.G.I., B.Sc., M.I.Mech.E.	
III- A-	100	a Paper by J. A. Stafford,		M.I.Mech.E	405
News of Members and New	136	M.I.Prod.E., A.M.I.I.A.	282	"Human Factors in Techno-	
Annaint-	139	"Aircraft Production in N.		logical Change" by Professor C. A. Mace, M.A.,	
Hazleton Memorial Library	140	Ireland" by Group-Capt. G. W. Williamson, O.B.E.,			
Memorial Entrary	140	M.C. F.P. A.S. M.L. C.F.		D.Litt., F.B.Ps.S	421
March		M.C., F.R.Ae.S., M.Inst.C.E.,	206	New Building Fund Appeal	425
"A New Dragon for St.		M.I.Mech.E., M.I.Prod.E. "The Production Engineer of	286	Institution Notes	426
George" by E. G. Brisch,		the Future" by E. C. Gor-		The Principal Officers, 1954/55	426
Dipl. Ing., M.I.Mech.E.,		don England, F.R.Ae.S.,		Council Elections, 1954/55 News of Members	427
M.I.Prod.E	143	M.I.Prod.E., F.I.I.A	291	Hazleton Memorial Library	428 430
		,			300

JOURNAL CONTENTS VOL. 33, 1954.

	Page		page		page
January		The 1953 Viscount Nuffield Pap		Institution Publications	298
"Some Aspects of Personnel		" Productivity-Are We On The		Correspondence	299
Management ' by Dr. A. S.		Right Road?" by The Rt.		Institution Notes	300
Roy	1	Hon. Lord Sempill, A.F.C.,		News of Members	302
"The Manufacture of Plate		F.R.Ae.S., Hon.M.I.Prod.E.	146	New Appointments	303
Glass" by Sir Harry		Report and Discussion	152	New Building Fund Appeal	304
Pilkington (The 1953 George		"The Effective Utilisation of		Members' Records	304
Bray Memorial Lecture)	7	Material" by Frank Nixon,		Hazleton Memorial Library	306
Report and Discussion	17	B.Sc., F.R.Ae.S., M.I.Mech.E.	159		
"Some Notes on Carbide Milling		Communications	181	June	
Practice at the Small Arms		"Measurement in Gear Manu-	100	"Depreciation of Plant and	
Factory, Lithgow, N.S.W."		facture" by R. D. B. Stone	183	Machine Tools" by Sir Stanley Rawson	315
by P. J. W. Cottrell, B.E.,	0.1	Future Institution Activities	186	"Fundamentals of Gauge De-	313
Grad.I.Prod.E	31	Report of the Annual General	187	sign" by K. J. Hume, B.Sc.,	
"The Ethics of Production"		Meeting, 28th January, 1954 Report of the Meeting of Coun-	107	M.I.Mech.E., M.I.Prod.E.	318
by R. W. Mann, M.I.E.E., M.I.Prod.E., M.I.Min.E	44	cil, January, 1954	189	Discussion	326
Institution Notes	48	Election of Members	190	"Development in Constitution	
Institution Notes New Appointments	49	Extracts from Local Section	130	Machines" by A. K. Thomas, V.D.I., A.M.I.Prod.E	
New Appointments Hazleton Memorial Library	50	Reports	192	Thomas, V.D.I.,	
Notice of Annual General	30	Institution Notes	196	A.M.I.Prod.E	329
Meeting	54	New Appointments	199	"Maximum Ex Minimo" by	
Articles of Association of the	0.	Hazleton Memorial Library	200	E. G. Brisch, Dipl.Ing., M.I.Mech.E., M.I.Prod.E.	
Institution of Production		,		M.I.Mech.E., M.I.Prod.E.	344
Engineers	56			Report of the Meeting of Coun-	
Report on Election of Members		April		cil, 29th April, 1954	352
to Council 1953/54	62	"The Finance of Production"		Election of Members	354
Report of Council, 1st July,		by S. P. Chambers, C.B.,	000	Extracts from Local Section	
1952, to 30th June, 1953	63	C.I.E	207	Reports	356
		An Investigation into Indus-		Institution Notes	360
February		trial Design and Drawing		New Appointments	363
The President	75	Practices in New South		New Building Fund Appeal	364
The President Conference on "Problems of		Wales, Australia, by	210	Hazleton Memorial Library Shell Moulding: a select	364
Aircraft Production"-Open-		I.Prod.E. Sydney Section "Some Present Day Trends in	210		365
ing Address by The Right		Engineering Metrology" by		bibliography	303
Hon. Lord Hawke	77	C. O. Taylerson, M.B.E.	233	July	
Programme and Speakers	79	"Manual Skills and Industrial	200	"The Production Exhibition	
Session I		Productivity" by W. Doug-		and Conference" by The	
"The Trend of Design" by			240	Rt. Hon. Peter Thorneycroft,	
D. Keith-Lucas, B.A.,	00	Communication	248	M.P	371
M.I.Mech.E., F.R.Ae.S Discussion	80 89	Institution Notes	249	Production Conference Papers	
Discussion Session II	03	Standardisation	249	"Practical Applications of Pro-	
"Production Problems Arising		Future Institution Activities	251	duction Engineering Re-	
from the Trend of Design"		News of Members	252	search" by Dr. D. F.	
by G. H. Dowty,		New Appointments	253	Galloway, Wh.Sch., B.Sc.(Hons), M.I.Mech.E., M.I.I.A., A.M.I.E.E., M.Inst.Pet.	
M.I.Mech.E., F.R.Ae.S.,		New Building Fund Appeal	254	B.Sc. (Hons), M.I.Mech.E.,	
F.I.Ae.S., and S. P. Woodley,		Hazleton Memorial Library	255	M.I.I.A., A.M.I.E.E.,	074
M.B.E	93			M.Inst.Pet.	374
Discussion	113	May		"Production Engineering Re- search and the Information	
Session III		"Design for Production" by		Services at Work in the Fac-	
"User Problems Affecting the		R. S. Medlock	261	tory" by W. P. Kirkwood,	
Industry" by B. S. Shen-		"The Trend of Surface		B. Sc., M.I.Mech.E.,	
stone, M.A.Sc., F.R.Ae.S.,		Measurement " by R. E.		M.I.Prod.E.	390
A.F.I.Ae.S., and Sir R. Owen		Reason, A.R.C.S	263	"The Trade Union Attitude to	330
Jones, K.B.E., C.B., A.F.C.		"Human Factors in Engineer-		Research and Productive	
Discussion		ing Production" by John		Research and Productive Efficiency" by James Craw-	
Conference Summing-up by Sir		Munro Fraser, M.A	277	ford, F.B.S.I	398
Frederick Handley Page,	100	Discussion	281	"Standardisation in the Process	
C.B.E	129	"Batch Quantities, Profits and		Industries " by E. W. Green-	
Institution Notes—The New	134	Investment "Abstracted from		smith, A.C.G.I., B.Sc., M.I.Mech.E.	
III- A-	100	a Paper by J. A. Stafford,		M.I.Mech.E	405
News of Members and New	136	M.I.Prod.E., A.M.I.I.A.	282	"Human Factors in Techno-	
Annaint-	139	"Aircraft Production in N.		logical Change" by Professor C. A. Mace, M.A.,	
Hazleton Memorial Library	140	Ireland" by Group-Capt. G. W. Williamson, O.B.E.,			
Memorial Entrary	140	M.C. F.P. A.S. M.L. C.F.		D.Litt., F.B.Ps.S	421
March		M.C., F.R.Ae.S., M.Inst.C.E.,	206	New Building Fund Appeal	425
"A New Dragon for St.		M.I.Mech.E., M.I.Prod.E. "The Production Engineer of	286	Institution Notes	426
George" by E. G. Brisch,		the Future" by E. C. Gor-		The Principal Officers, 1954/55	426
Dipl. Ing., M.I.Mech.E.,		don England, F.R.Ae.S.,		Council Elections, 1954/55 News of Members	427
M.I.Prod.E	143	M.I.Prod.E., F.I.I.A	291	Hazleton Memorial Library	428 430
		,			300

Editorial Committe "Design and Operatic Fired Furnaces" Austin, A.M.Inst.I "Production Control at to Small and Med Companies" by F. ter, A.C.A., "Plastics-Moulding aring Processes" b Spence, A.M.I.Pre "Boron Steels" by R "The Value of Work Industry", by Hodgetts, M.I.Pro "The Practical Appl Statistics to Engineering by Fry, B.Sc., A.I. Abstract "The Rate of 'Pac Machine Systems	Awards,	Charles Cooper, A.M.I.Prod.E., A.M.I.I.A., M.I.Ec.E	648 650 620 653 654 655 657
Fuire Institution Act New Building Fund A Hazleton Memorial L October "Education and Rese Production" by M M.Sc., M. I. M. M M.Sc., M. I. M. M M.I.Prod.E., Editorial Committe "Design and Operative Fired Furnaces" Austin, A.M.Inst.I. "Production Control at to Small and Med Companies" by F. ter, A.C.A., "Plastics-Moulding aing Processes" b Spence, A.M.I.Pro "Boron Steels" by R "The Value of Work Industry", by Hodgetts, M.I.Pro "The Practical Appl Statistics to I Engineering by Fry, B.Sc., A.I. "Abstract "The Rate of 'Pac	ivities 535 ivppeal 513 ibrary 535 earch for 535 earch for 543 earch for 543 on of Oil by J. M 544 ium Sized T. Hun- A.C.W.A. 556 and Form- y G. T. dol.E 563 Wilcock 570 Study to W. H. d.E 575 ication of Production Ronald E.	M.I.Ec.E. Abstracts Progress in Automatic Production" by H. L. Waddell The Future of Automatic Machinery" by Norbert Wiener Future Institution Activities New Building Fund Appeal Institution Notes News of Members Hazleton Memorial Library December "Education and Research for Production" by Sir Ben Lockspeiser, K.C.B., F.R.S., M.I.Mech.E., R.R.A.e.S. "The Investment Casting Process" by D. F. B. Tedds, F.I.M. "Machine Tools for Precision Work in the Clock and Watch Industry" by H. Matthews, A.M.I.Prod.E. "The Use of Work Study by Management" by R. B. Kemball-Cook,	650 620 653 654 655 657 661 663
Future Institution Act New Building Fund A Hazleton Memorial L October "Education and Res Production" by M M.Sc., M. I. M. M.I.Prod.E., C Editorial Committe "Design and Operative Fired Furnaces" Austin, A.M.Inst.H "Production Control at to Small and Med Companies" by F. ter, A.C.A., "Plastics-Moulding as ing Processes" by Spence, A.M.I.Pre Boron Steels" by R "The Value of Work Industry", by Hodgetts, M.I.Pro "The Practical Appl Statistics to Engineering" by Fry, B.Sc., A.I. Abstract "The Rate of 'Pac Machine Systems	earch for Seaman, e.c. h	Abstracts "Progress in Automatic Production" by H. L. Waddell "The Future of Automatic Machinery" by Norbert Wiener Future Institution Activities New Building Fund Appeal Institution Notes Hazleton Members Hazleton Members "Education and Research for Production" by Sir Ben Lockspeiser, K.C.B., F.R.S., M.I.Mech.E., R.R.A.e.S. "The Investment Casting Process" by D. F. B. Tedds, F.I.M. "Machine Tools for Precision Work in the Clock and Watch Industry" by H. Matthews, A.M.I.Prod.E. "The Use of Work Study by Management" by R. B. Kemball-Cook,	648 650 620 653 654 655 657 661 663
New Building Fund A Hazleton Memorial L October "Education and Rese Production" by M M.Sc., M.I.M. M.I.Prod.E., Editorial Committe The Series of Series of the Series of Series of the	ppeal 513 brary 535 earch for Seaman, e.c. h. E., Chairman, 543 on of Oil by J. M 544 is Applied ium Sized T. Hun-A.C.W.A. 556 nd Formy G. T. d. E 563 w. Wilcock Study to W. H. d.E 575 ication of Production Ronald E.	"Progress in Automatic Production" by H. L. Waddell "The Future of Automatic Machinery" by Norbert Wiener New Building Fund Appeal Institution Notes News of Members Hazleton Memorial Library December "Education and Research for Production" by Sir Ben Lockspeiser, K.C.B., F.R.S., M.I.Mech.E., R.R.Ae.S "The Investment Casting Process" by D. F. B. Tedds, F.I.M "Machine Tools for Precision Work in the Clock and Watch Industry" by H. Matthews, A.M.I.Prod.E "The Use of Work Study by Management" by R. B. Kemball-Cook,	650 620 653 654 655 657 661 663
Hazleton Memorial L October "Education and Rese Production" by M M.Sc., M. I. M. M.Sc., M. I. M. M.I.Prod.E., Editorial Committe Design and Operation Fired Furnaces" Austin, A.M.Inst.I. Production Control at the Small and Med Companies" by F. ter, A.C.A., Plastics-Moulding aing Processes by Spence, A.M.I.Pro Boron Steels" by R. The Value of Work Industry", by Hodgetts, M.I.Pro The Practical Appl Statistics to Engineering by Fry, B.Sc., A.I. Abstract "The Rate of 'Pac Machine Systems Sy	earch for Seaman, ec h. E., Chairman, ee 543 on of Oil by J. M. S 544 ium Sized T. Hun- A.C.W.A. 556 and Form- y G. T. oid.E 563 Wilcock Study to W. H. d.E 575 ication of Production Ronald E.	tion" by H. L. Waddell "The Future of Automatic Machinery" by Norbert Wiener Future Institution Activities New Building Fund Appeal Institution Notes News of Members Hazleton Memorial Library December "Education and Research for Production" by Sir Ben Lockspeiser, K.C.B., F.R.S., M.I.Mech.E., R.R.A.e.S "The Investment Casting Process" by D. F. B. Tedds, F.I.M "Machine Tools for Precision Work in the Clock and Watch Industry" by H. Matthews, A.M.I.Prod.E "The Use of Work Study by Management" by R. B. Kemball-Cook,	650 620 653 654 655 657 661 663
October "Education and Rese Production" by M. M.Sc., M. I. M. M. M.I.Prod. E., C. Editorial Committe Pesign and Operation of the Production Control at the Small and Med. Companies" by F. ter, A.C.A., "Plastics-Moulding at ing Processes" by Spence, A.M.I.Pro "Boron Steels" by R. "The Value of Work Industry", by Hodgetts, M.I.Pro "The Practical Appl Statistics to Engineering by Fry, B.Sc., A.I. Abstract "The Rate of 'Pack Machine Systems Syste	earch for Seaman, e.c. h. E., chairman, e.c 543 on of Oil by J. M. 544 s Applied ium Sized T. Hun-A.C.W.A. 556 and Formy G. T. d.E 563 Wilcock Study to W. H. d.E 575 ication of Production Ronald E.	Wiener Future Institution Activities New Building Fund Appeal Institution Notes News of Members Hazleton Memorial Library Dzeember "Education and Research for Production" by Sir Ben Lockspeiser, K.C.B., F.R.S., M.I.Mech.E., R.R.A.e.S "The Investment Casting Process" by D. F. B. Tedds, F.I.M. "Machine Tools for Precision Work in the Clock and Watch Industry" by H. Matthews, A.M.I.Prod.E "The Use of Work Study by Management" by R. B. Kemball-Cook,	620 653 654 655 657 661 663
"Education and Resi Production" by M M.Sc., M.I.M. M.I.Prod.E., Editorial Committe Design and Operation Fired Furnaces" Austin, A.M.Inst.I. "Production Control at to Small and Med Companies" by F. ter, A.C.A., "Plastics-Moulding aing Processes" b Spence, A.M.I.Pro "Boron Steels" by R "The Value of Work Industry", by Hodgetts, M.I.Pro "The Practical Appl Statistics to I Engineering" by Fry, B.Sc., A.I.S. Abstract	Seaman, e. c. h. E., Chairman, e. c. h. E., S43 on of Oil by J. M. S44 on Sized T. Hun-A.C.W.A. 556 on Formy G. T. d.E 563 Wilcock Study to W. H. d.E 575 ication of Production Ronald E.	Wiener Future Institution Activities New Building Fund Appeal Institution Notes News of Members Hazleton Memorial Library Dzeember "Education and Research for Production" by Sir Ben Lockspeiser, K.C.B., F.R.S., M.I.Mech.E., R.R.A.e.S "The Investment Casting Process" by D. F. B. Tedds, F.I.M. "Machine Tools for Precision Work in the Clock and Watch Industry" by H. Matthews, A.M.I.Prod.E "The Use of Work Study by Management" by R. B. Kemball-Cook,	620 653 654 655 657 661 663
Production " by M. M.Sc., M. I. M. M. M.Sc., M. I. M. M. M.I. Prod.E., C. Editorial Committe "Design and Operative Fired Furnaces" Austin, A.M.Inst.I. "Production Control at to Small and Med. Companies" by F. ter, A.C.A., "Plastics-Moulding aing Processes " by Spence, A.M.I.Pro. "Boron Steels" by R. "The Value of Work Industry", by Hodgetts, M.I.Pro. "The Practical Appl. Statistics to Engineering by Fry, B.Sc., A.I. Abstract "The Rate of 'Pac. Machine Systems Syst	Seaman, e. c. h. E., Chairman, e. c. h. E., S43 on of Oil by J. M. S44 on Sized T. Hun-A.C.W.A. 556 on Formy G. T. d.E 563 Wilcock Study to W. H. d.E 575 ication of Production Ronald E.	Future Institution Activities New Building Fund Appeal Institution Notes News of Members Hazleton Members Hazleton Memorial Library December "Education and Research for Production" by Sir Ben Lockspeiser, K.C.B., F.R.S., M.I.Mech.E., R,R.Ae.S. "The Investment Casting Process" by D. F. B. Tedds, F.I.M. "Machine Tools for Precision Work in the Clock and Watch Industry" by H. Matthews, A.M.I.Prod.E. "The Use of Work Study by Management" by R. B. Kemball-Cook,	620 653 654 655 657 661 663
M.Sc., M. I. M. M.I.Prod.E., Editorial Committe "Design and Operative Fired Furnaces" Austin, A.M.Inst.I. "Production Control at to Small and Med Companies" by F. ter, A.C.A., "Plastics-Moulding as ing Processes" by Spence, A.M.I.Pro. "Boron Steels" by R. "The Value of Work Industry", by Hodgetts, M.I.Pro. "The Practical Appl Statistics to Engineering" by Fry, B.Sc., A.I. Abstract "The Rate of 'Pac Machine Systems Syst	c c h . E	New Building Fund Appeal Institution Notes News of Members Hazleton Memorial Library December "Education and Research for Production" by Sir Ben Lockspeiser, K.C.B., F.R.S., M.I.Mech.E., R.R.Ae.S "The Investment Casting Process" by D. F. B. Tedds, F.I.M "Machine Tools for Precision Work in the Clock and Watch Industry" by H. Matthews, A.M.I.Prod.E "The Use of Work Study by Management" by R. B. Kemball-Cook,	653 654 655 657 661 663
M.I.Prod.E., C. Editorial Committe The State of S	Chairman, ee 543 on of Oil by J. M 544 is Applied ium Sized T. Hun-A.C.W.A. 556 nd Form-y G. T 563 Wilcock 570 Study to W. H. d.E 575 ication of Production Ronald E.	Institution Notes News of Members Hazleton Memorial Library Dzecmber "Education and Research for Production" by Sir Ben Lockspeiser, K.C.B., F.R.S., M.I.Mech.E., R.R.Ae.S "The Investment Casting Process" by D. F. B. Tedds, F.I.M "Machine Tools for Precision Work in the Clock and Watch Industry" by H. Matthews, A.M.I.Prod.E "The Use of Work Study by Management" by R. B. Kemball-Cook,	654 655 657 661 663
Editorial Committe Design and Operative Fired Furnaces " Austin, A.M.Inst.F Production Control at to Small and Med Companies " by F. ter, A.C.A., Plastics-Moulding aing Processes " b Spence, A.M.I.Pro "Boron Steels" by R "The Value of Work Industry", by Hodgetts, M.I.Pro "The Practical Appl Statistics to l Engineering by Fry, B.Sc., A.I. Abstract "The Rate of 'Pace Machine Systems Sy	on of Oil by J. M. S 544 S. Applied ium Sized T. Hun- A.C.W.A. 556 and Form- y G. T. d.E 563 Wilcock 570 Study to W. H. d.E 575 ication of Production Ronald E.	December "Education and Research for Production" by Sir Ben Lockspeiser, K.C.B., F.R.S., M.I.Mech.E., R.R.Ae.S "The Investment Casting Process" by D. F. B. Tedds, F.I.M "Machine Tools for Precision Work in the Clock and Watch Industry" by H. Matthews, A.M.I.Prod.E "The Use of Work Study by Management" by R. B. Kemball-Cook,	657 661 663 678
Fired Furnaces" Austin, A.M.Inst.R Production Control a to Small and Med Companies" by F. ter, A.C.A., "Plastics-Moulding aing Processes" b Spence, A.M.I.Pro "Boron Steels" by R "The Value of Work Industry", by Hodgetts, M.I.Pro "The Practical Appl Statistics to I Engineering" by Fry, B.Sc., A.I. Abstract "The Rate of 'Pac	by J. M. S. Applied ium Sized T. Hun- A.C.W.A. 556 and Form- y G. T. old.E 563 Wilcock 570 Study to W. H. d.E 575 ication of Production Ronald E.	December "Education and Research for Production" by Sir Ben Lockspeiser, K.C.B., F.R.S., M.I.Mech.E., R.R.Ae.S "The Investment Casting Process" by D. F. B. Tedds, F.I.M "Machine Tools for Precision Work in the Clock and Watch Industry" by H. Matthews, A.M.I.Prod.E "The Use of Work Study by Management" by R. B. Kemball-Cook,	661 663 678
Austin, A.M.Inst.I. Production Control at the Small and Med Companies by F. ter, A.C.A., Plastics-Moulding at ing Processes by Spence, A.M.I.Pro Boron Steels by R. The Value of Work Industry, by Hodgetts, M.I.Pro The Practical Appl Statistics to be Engineering by Fry, B.Sc., A.I. Abstract The Rate of Pac Machine Systems.	s Applied ium Sized T. Hun-A.C.W.A. 556 and Form-y G. T. d.E 563 Wilcock 570 Study to W. H. d.E 575 ication of Production Ronald E.	"Education and Research for Production" by Sir Ben Lockspeiser, K.C.B., F.R.S., M.I.Mech.E., R.R.A.e.S "The Investment Casting Process" by D. F. B. Tedds, F.I.M "Machine Tools for Precision Work in the Clock and Watch Industry" by H. Matthews, A.M.I.Prod.E "The Use of Work Study by Management" by R. B. Kemball-Cook,	663
"Production Control at to Small and Med Companies" by F. ter, A.C.A., "Plastics-Moulding as ing Processes "b Spence, A.M.I.Pro "Boron Steels" by R "The Value of Work Industry", by Hodgetts, M.I.Pro "The Practical Appl Statistics to Engineering" by Fry, B.Sc., A.I. Abstract "The Rate of 'Pac Machine Systems Sy	s Applied ium Sized T. Hun- A.C.W.A. 556 ad Form- y G. T. d.E 563 Wilcock 570 Study to W. H. d.E 575 ication of Production Ronald E.	"Education and Research for Production" by Sir Ben Lockspeiser, K.C.B., F.R.S., M.I.Mech.E., R.R.A.e.S "The Investment Casting Process" by D. F. B. Tedds, F.I.M "Machine Tools for Precision Work in the Clock and Watch Industry" by H. Matthews, A.M.I.Prod.E "The Use of Work Study by Management" by R. B. Kemball-Cook,	663
to Small and Med Companies" by F. ter, A.C.A., "Plastics-Moulding at ing Processes" b Spence, A.M.I.Pro "Boron Steels" by R "The Value of Work Industry", by Hodgetts, M.I.Pro "The Practical Appl Statistics to I Engineering" by Fry, B.Sc., A.I. Abstract "The Rate of 'Pac	ium Sized T. Hun- A.C.W.A. 556 nd Form- y G. T. oid.E 563 Wilcock 570 Study to W. H. d.E 575 ication of Production Ronald E.	Production" by Sir Ben Lockspeiser, K.C.B., F.R.S., M.I.Mech.E., R.R.Ae.S "The Investment Casting Process" by D. F. B. Tedds, F.I.M" "Machine Tools for Precision Work in the Clock and Watch Industry" by H. Matthews, A.M.I.Prod.E "The Use of Work Study by Management" by R. B. Kemball-Cook,	663
ter, A.C.A., "Plastics-Moulding as ing Processes" b Spence, A.M.I.Pro Boron Steels" by R The Value of Work Industry", by Hodgetts, M.I.Pro The Practical Appl Statistics to Engineering by Fry, B.Sc., A.I. Abstract "The Rate of 'Pac Machine Systems Syste	A.C.W.A. 556 nd Form y G. T. d.E 563 Wilcock 570 Study to W. H. d.E 575 ication of Production Ronald E.	M.I.Mech.E., R.R.A.e.S "The Investment Casting Process" by D. F. B. Tedds, F.I.M "Machine Tools for Precision Work in the Clock and Watch Industry" by H. Matthews, A.M.I.Prod.E "The Use of Work Study by Management" by R. B. Kemball-Cook,	663
sing Processes" b Spence, A.M.I.Pro "Boron Steels" by R "The Value of Work Industry", by Hodgetts, M.I.Pro "The Practical Appl Statistics to I Engineering" by Fry, B.Sc., A.I. Abstract "The Rate of 'Pac Machine Systems	y G. T. doi.E 563 Wilcock 570 Study to W. H. d.E 575 ication of Production Ronald E.	"The Investment Casting Process" by D. F. B. Tedds, F.I.M "Machine Tools for Precision Work in the Clock and Watch Industry" by H. Matthews, A.M.I.Prod.E "The Use of Work Study by Management" by R. B. Kemball-Cook,	663
sing Processes" b Spence, A.M.I.Pro "Boron Steels" by R "The Value of Work Industry", by Hodgetts, M.I.Pro "The Practical Appl Statistics to I Engineering" by Fry, B.Sc., A.I. Abstract "The Rate of 'Pac Machine Systems	y G. T. doi.E 563 Wilcock 570 Study to W. H. d.E 575 ication of Production Ronald E.	cess" by D. F. B. Tedds, F.I.M	678
Spence, A.M.I.Prc "Boron Steels" by R "The Value of Work Industry", by Hodgetts, M.I.Pro "The Practical Appl Statistics to Engineering" by Fry, B.Sc., A.I. Abstract "The Rate of 'Pac	d.E 563 Wilcock 570 Study to W. H. d.E 575 ication of Production Ronald E.	F.I.M. "Machine Tools for Precision Work in the Clock and Watch Industry" by H. Matthews, A.M.I.Prod.E "The Use of Work Study by Management" by R. B. Kemball-Cook,	678
"The Value of Work Industry", by Hodgetts, M.I.Pro "The Practical Appl Statistics to I Engineering" by Fry, B.Sc., A.I. Abstract "The Rate of 'Pac Machine Systems	Study to W. H. d.E 575 ication of Production Ronald E.	Work in the Clock and Watch Industry" by H. Matthews, A.M.I.Prod.E "The Use of Work Study by Management" by R. B. Kemball-Cook,	
Industry", by Hodgetts, M.I.Pro "The Practical Appl Statistics to Engineering" by Fry, B.Sc., A.I. Abstract "The Rate of 'Pac Machine Systems, Systems	W. H. d.E 575 ication of Production Ronald E.	Watch Industry" by H. Matthews, A.M.I.Prod.E "The Use of Work Study by Management" by R. B. Kemball-Cook,	
"The Practical Appl Statistics to I Engineering" by Fry, B.Sc., A.I.: Abstract "The Rate of 'Pac Machine Systems	ication of Production Ronald E.	Matthews, A.M.I.Prod.E "The Use of Work Study by Management" by R. B. Kemball-Cook,	
"The Practical Appl Statistics to I Engineering" by Fry, B.Sc., A.I.: Abstract "The Rate of 'Pac Machine Systems	ication of Production Ronald E.	"The Use of Work Study by Management" by R. B. Kemball-Cook,	
Statistics to I Engineering " by Fry, B.Sc., A.I. Abstract "The Rate of 'Pac Machine Systems	Production Ronald E.	by Management by R. B. Kemball-Cook,	
Fry, B.Sc., A.I.S. Abstract "The Rate of 'Pac Machine Systems	Konald E. 3., F.S.S. 580		
Abstract "The Rate of 'Pac Machine Systems	5., F.S.S. 360	A.M.I.Mech.E	
"The Rate of 'Pac Machine Systems		A.M.I.Mech.E "Resistance Welding in	
Machine Systems	ed' Man-	America" by G. Cubitt-	
	" by R.	Smith, M.Met.E.,	
Conrad, Ph.D., A	M.A 562	D.L.C.(Hons), G.I.Mech, E., Grad.I.Prod.E., Grad.I.W.E.	cor
Future Institution Ac New Building Fund A		Report of the Meeting of Coun-	
News of Members	590	Election of Members	
Hazleton Memorial I	Library 592		
November			708
	search for		
Production ". Ann	ual Dinner	Chesterfield Street, London,	
			713
" Modern Gear Produ			
H. J. Watson, I	S.Sc.(Eng.),		
A.M.I.Mech.E.	601	1954	723
"Special Purpose	Machine	First Yorkshire Regional Grad-	
tion" by I C	Z. Martin		
D.L.C., Grad.I.P	rod.E 621	end School	704
"The Shell Moulding	g Process "	The Lord Austin Prize	72
by D. N. Buttr	ey, M.Sc.,		
	Scientific 034	T	-
		News of Members	201
		Hazleton Memorial Library	
	,	•	
SUBJECT	INDEX		
SOBJEC.	IIIDLA		
	Institution Notes News of Members Hazleton Memorial L November "Education and Res Production". Annu Speeches by Lt. Ronald Weeks, S Puckey, and Mr. G "Modern Gear Produ H. J. Watson, B A.M.I.Mech.E. "Special Purpose Tools and Unit tion" by J. C. Z D.L.C., Grad.I.P "The Shell Moulding by D. N. Buttre A.R.I.C., A.P.I. "The Application of Administration M Engineering Produ	Institution Notes News of Members 589 News of Members 590 Hazleton Memorial Library 592 November "Education and Research for Production". Annual Dinner Speeches by LtGen. Sir Ronald Weeks, Sir Walter Puckey, and Mr. G. R. Pryor "Modern Gear Production" by H. J. Watson, B.Sc. (Eng.), A.M.I.Mech.E 601 "Special Purpose Machine Tools and Unit Construction" by J. C. Z. Martin, D.L.C., Grad.I.Prod.E 621 "The Shell Moulding Process" by D. N. Buttrey, M.Sc., A.R.I.C., A.P.I 634 "The Application of Scientific Administration Methods to	Institution Notes News of Members

326

354

	page		page
Automation "The Rate of 'Paced' Man-Machine Systems" by R. Conrad, Ph.D., M.A. "Progress in Automatic Production" by H. L.	562	Gas Turbines—Manufacture "The Gas Turbine and the Production Engineer" by W. A. Sales, O.B.E. (Production Exhibition and Conference 1954)	
Waddell "The Future of Automatic Machinery" by Norbert Wiener	648 650	Gas Turbines—Materials "Materials for Gas Turbines" by H. Sutton, C.B.E., D.Sc., F.R.Ae.S., F.I.M.	
Boron Steel "The Use of Boron Steels" by R. Wilcock	570	(Production Exhibition and Conference 1954) Gauges	449
"C" Process see: Shell Moulding		"Fundamentals of Gauge Design" by K. J. Hume, M.I.Prod.E	318
Carbide Milling Cutters see: Milling Cutters, Carbide		Gear Hobbing Machines "Development in Gear-Hobbing Machines" by A. K. Thomas, V.D.I., A.M.I.Prod.E	329
Classification "Maximum ex Minimo" by E. G. Brisch, Dipl.Ing., M.I.Mech.E., M.I.Prod.E	344	Gears—Manufacture "Modern Gear Production" by H. J. Watson, B.Sc.(Eng.), A.M.I.Mech.E	601
Clocks—Manufacture "Machine Tools for Precision Work in the Clock and Watch Industry" by H. Matthews, A.M.I.Prod.E.	678	Gears—Measurement "Measurement in Gear Manufacture" by R. D. B. Stone	183
Croning Process see: Shell Moulding		Glass—Manufacture "The Manufacture of Plate Glass" by Sir Harry Pilkington.	
Depreciation "Depreciation of Plant and Machine Tools" by Sir Stanley Rawson	315	(1953 George Bray Memorial Lecture) Industry and Trade—Great Britain "Work of the British Standards Institution as Affect-	7
Design "Design for Production" by R. S. Medlock	261	ing Export Trade" by H. A. R. Binney, C.B. (Production Exhibition and Conference 1954)	468
Documentation and Information "Production Engineering Research and the Informa- tion Services at Work in the Factory" by W. P. Kirkwood, B.Sc., M.I.Mech.E., M.I.Prod.E (Production Exhibition and Conference 1954)	390	Information Services see: Documentation and Information Investment Casting see: Precision Investment Casting	
Drawing Office Practice		Limits and Fits see: Fits and Tolerances	
"An Investigation into Industrial Design and Drawing Practices in New South Wales, Australia" by I.Prod.E. Sydney Section	010	Lost Wax Process see: Precision Investment Casting	
Education, Technical and Professional "Some Problems of Higher Technological Education" by The Rt. Hon. The Earl of Halsbury, F.R.I.C., F.Inst.P., (The 1954 Sir Alfred Herbert Paper read		Machine Tools "Machine Tools for Precision Work in the Clock and Watch Industry" by H. Matthews	678
at the Production Exhibition and Conference) "Education and Research for Production" Annual Dinner Speeches by Sir Walter Puckey, Sir Ronald Weeks, and Mr. G. R. Pryor	492	Machine Tools, Special Purpose "Special Purpose Machine Tools and Unit Construc- tion" by J. C. Z. Martin, D.L.C., Grad.I.Prod.E	621
"Education and Research for Production" by M. Seaman, M.I.Prod.E		Management see also: Financial Management Personnel Management	
Electrical Equipment—Standardisation "Standards in the Exporting Industries" by D. Maxwell Buist, M.I.E.E., M.I.Ex. (Production Exhibition and Conference 1954)	450	Production Planning and Control "It all Depends on Management" by F. C. Hooper. (Production Exhibition and Conference 1954)	
Financial Management see also: Depreciation "The Finance of Production" by S. P. Chambers,		Materials "The Effective Utilisation of Material" by F. Nixon, B.Sc., F.R.Ae.S., M.I.Mech.E.	159
C.B., C.I.E Batch Quantities, Profits and Investment " by J. A. Stafford, M.I.Prod.E., A.M.I.I.A	207	Mathematics see also: Preferred Numbers	
Fits and Tolerances "An Investigation into Industrial Design and Drawing Practices in New South Wales, Australia" by I.Prod.E. Sydney Section		Metrology see also: Gauges; and the sub-headings Measure- ment under subject:- e.g., GEARS—MEASUREMENT SUR-	
Foundry Practice see also: Precision Investment Casting and Shell Moulding		"Some Present Day Trends in Engineering Met- rology" by C. O. Taylerson, M.B.E	000
Furnaces "Design and Operation of Oil Fired Furnaces" by J. M. Austin, A.M.Inst.F.	544	Milling Cutters, Carbide "Some Notes on Carbide Milling Practice at the Small Arms Factory, Lithgow, N.S.W." by P. J. W. Cottrell, B.E., Grad, I. Prod. E.	

	page		page
Moulding—Plastics "Plastics—Moulding and Forming Processes" by G. T. Spence, A.M.I.Prod.E	563	Shell Moulding Process" by D. N. Buttrey, M.Sc., A.R.I.C., A.P.I	634
Moulding, Shell see: Shell Moulding		Shell Moulding—Bibliography "Shell Moulding: a select bibliography of literature	
New Methods and Personnel Management see: Personnel Management and New Methods		in the Library" by The Hazleton Memorial Library of the Institution of Production Engineers, London Small Business	365
Packaging "Packaging and Movement" by R. E. Huffam, M.C. (Production Exhibition and Conference 1954)	462	"Production Control as applied to Small and Medium Sized Companies" by F. T. Hunter, A.C.A., A.C.W.A. "Introduction of Work Study into Smaller Firms" by H. G. Wood, M.A., B.Sc., M.I.W.M.	556
Personnel Management "Human Factors in Engineering Production" by John		(Production Exhibition and Conference 1954)	454
Munro Fraser, M.A	44	Special Purpose Machines see: Machine Tools, Special Purpose Standardisation	
A. S. Roy	1	see also as a sub-heading: e.g., ELECTRICAL EQUIPMENT—Standardisation	
"The Trade Union Attitude to Research and Productive Efficiency" by James Crawford, F.B.S.I. (Production Exhibition and Conference 1954) "Human Factors in Technological Change" by Beryl	398	"Work of the British Standards Institution as Affecting Export Trade" by H. A. R. Binney, C.B. (Production Exhibition and Conference 1954) "Simplification by Selection" by H. G. Conway, M.A., F.R.Ae.S., M.I.Mech.E.	468
Foyle (Production Exhibition and Conference 1954) "Human Factors in Technological Change" by Professor C. A. Mace, M.A., D.Litt., F.B.Ps.S.		(Production Exhibition and Conference 1954) "Standardisation in the Process Industries" by E. W. Greensmith, A.C.G.I., B.Sc., M.I.Mech.E. (Production Exhibition and Conference 1954)	437
(Production Exhibition and Conference 1954)	421	Statistical Methods	
Plastics—Moulding see: Moulding—Plastics		"Practical Application of Statistics to Production Engineering" by R. E. Fry, B.Sc., A.I.S., F.S.S	580
"The Investment Casting Process" by D. F. B. Tedds, F.I.M	663	Steel see: Boron Steel	
Preferred Numbers "Simplification by Selection" by H. G. Conway M.A., F.R.Ae.S., M.I.Mech.E.	, . 437	Stores Control see: Classification Surface Finish—Measurement	
(Production Exhibition and Conference 1954) Production Engineering		"Trend of Surface Measurement" by R. E. Reason A.R.C.S	. 263
"Application of Scientific Administration Method to Engineering Production" by Charles Cooper A.M.I.Prod.E., A.M.I.I.A., M.I.Ec.E "The Production Engineer of the Future" by E. C.	. 642	Technical Education see: Education, Technical and Professional Tolerances	
Gordon England, F.R.Ae.S., M.I.Prod.E., F.I.I.A Production Engineering—Research	. 291	see: Fits and Tolerances	
"Practical Applications of Production Engineering Research" by Dr. D. F. Galloway, Wh.Sch. B.Sc. (Hons.), M.I.Mech.E., M.I.I.A., A.M.I.E.E. M.Inst.Pet., M.I.Prod.E.	,	Trade Unions "The Trade Union Attitude to Research and Productive Efficiency" by James Crawford, F.B.S.I (Production Exhibition and Conference 1954)	i. . 398
(Production Exhibition and Conference 1954) "Production Engineering Research and the Information Services at Work in the Factory" by W. F	. 374	Turbines see: Gas Turbines	
Kirkwood, B.Sc., M.I.Mech.E., M.I.Prod.E. (Production Exhibition and Conference 1954)	. 390	Watches—Manufacture "Machine Tools for Precision Work in the Clock an Watch Industry" by H. Matthews, A.M.I.Prod.E	
Production Planning and Control "Production Control as applied to Small and Mediur Sized Companies" by F. T. Hunter, A.C.A. A.C.W.A	.,	Welding, Resistance "Resistance Welding in America" by Guy Cubitt Smith, Grad.I.Prod.E	
Productivity "Productivity and Natural Resources" by Grahar Hutton, O.B.E.	m	Work Measurement "The Rate of 'paced' Man-Machine Systems" by F Conrad, Ph.D., M.A.,,,	R. 562
(Production Exhibition and Conference 1954) "Productivity—Are we on the Right Road?" by Th Rt. Hon. Lord Sempill, A.F.C., F.R.Ae.S	ne	Work Study "The Value of Work Study to Industry" by W. Hodgetts. M.I.Prod.E.	ł. 575
Hon.M.I.Prod.E. (1953 Viscount Nuffield Paper)	146	"The Use of Work Study by Management" by R. I Kemball-Cook, A.M.I.Mech.E.	B. 687
Renard Numbers see: Preferred Numbers		"Manual Skills and Industrial Productivity" by V Douglas Seymour "Introduction of Work Study into Smaller Firms	V. 240
Resistance Welding see: Welding, Resistance		by H. G. Wood, M.A., B.Sc., M.I.W.M.	454

ge